

Date: Friday, 17/08/2007 11:19:09 AM
 User: Linda Lacelle

Process Sheet

Customer :	CU-DAR001 Dart Helicopters Services	Drawing Name :	02.250 SUPPORT
Job Number :	34062		
Estimate Number :	11057		
P.O. Number :	N/A	Part Number :	D28911
This Issue :	17/08/2007	S.O. No. :	N/A
Prsht Rev. :	NC	Drawing Number :	D2891 REV A1
First Issue :	N/A	Project Number :	N/A
Previous Run :	33693	Drawing Revision :	A1
		Material :	N/A
Written By :	Due Date :		22/09/2007
Checked & Approved By :	Qty:		16 Um: Each
Comment :	Est. 6.02.11.26 Added P/O KJ		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	PG	PURCHASING
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Comment: PURCHASING

Issue P/O: 4392

C207108117

(16)

Description: D6104-003

Material: 17-4 PH SS (AMS 5643 OR AISI 630) as per Dwg D6104

Material release note required.

Blank size makes (2) D2891-1

2.0	D6104003	17-4 SS Roundbar 3.25"OD
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Comment: Qty.: 1.0000 Each(s)/Unit Total: 16.0000 Each(s)
 Support 2.25 dia

3.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Recieve & Inspect for Transit Damage
 Ensure Material Release Note is attached

Pc 7/8/31 (16)

4.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
-----	------------	----------------------------



Comment: MORI SEIKI LATHE

Turn blank for Haas as per Folio FA046

7/8/31 (16)

5.0	QC1	INSPECT ALL DIM TO DIM SHEET
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Comment: INSPECT ALL DIM TO DIM SHEET

7/8/31 (16)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 17/08/2007 11:19:09 AM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 02.250 SUPPORT

Job Number: 34062

Part Number: D28911

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

HAAS1

HAAS CNC VERTICAL MACHINING #1



Comment: HAAS

Machine as per Folio FA046

Tumble & Deburr

J.L. / S.F. 07/11/18

7.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

J.L. / S.F. 07/11/18

8.0

QC8

SECOND CHECK



Comment: SECOND CHECK

J.F. 07/11/22 (16)

9.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.2) as per QSI 005 4.3

M105914

M-L 07/11/23

16X

10.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

F.L. 07/11/23 (16)

11.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: LG

1A~

ml 07 11 26

Iman 12/07
32

12.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



U 07/11/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

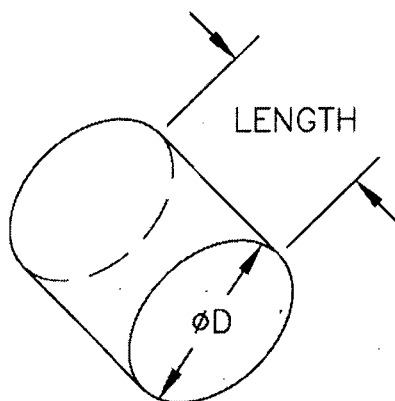


DESIGN RT	DRAWN BY 	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 	APPROVED 	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED

02.11.29

SPECIFICATION CONTROL DRAWING



MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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07-25-07 07:24 FROM-

1-012 F002/000 F 003

P.O. BOX 977
SYRACUSE
NEW YORK 13201

CERTIFICATE OF TEST

A M CASTLE, INC

3400 N WOLF RD
FRANKLIN PARK, IL 60131SHIP
TO

A M CASTLE, INC

26800 MILES RD
BEDFORD HEIGHTS OH 44146

03

OUR ORDER NO.

PS-11330-7-0

DATE

5/7/18/07

CUSTOMER ORDER # & DATE

10-31163

CUSTOMER REQ. #

DISTRICT

B PARSONS

SHIPPED
FROM

SYRACUSE

DESCRIPTION OF MATERIAL

SIZE

3.250 RD

CRU 17-4PH RT A IAC 42470

AMC-3174-10 REV 7

ASME-SA564-04ED T630

ASTM-A564-04 T630

AMS-56430 AISI 630 UNS-S17400

CHEMICAL ANALYSIS

HEAT NO.

HEAT NO.	C	MN	P	S	SI	NI	CR	MO	CU	CB	TA
A18939	.037	.42	.027	.022	.63	4.09	15.28	.11	3.22	.29	.012

CASTLE METALS CORP.

DATE RCVD 7/25/12

IAC 42470

APPROVED BY [Signature]

MECHANICAL PROPERTIES

QUANTITY	HEAT NO.	TENSILE PSI	YLD. 2% PSI	ELONG40	RED/AREA%	HARDNESS
1814 #	A18939					BHN 356
CAPABILITY PHYSICALS AFTER 900 DEG. F. - 1 HR. AIRCOOL:						
		203,000	174,000	12.3	51.1	BHN 415

MACRO TEST OK
FERRITE 5 %
MAGNAFLUX F/S = 0/0

REDUCTION RATIO: 27.5:1
MATERIAL SOLUTION TREATED AT 1900 DEG. F. HELD 45 MINUTES AT TEMPERATURE -
AIRCOOLED.

CRUCIBLE MATERIALS CORP. VENDOR 115610.

MATERIAL INGEST CAST.

NAPCA - YES

MATERIAL FREE FROM MERCURY CONTAMINATION AT TIME OF SHIPMENT
NO WELD REPAIR PERFORMED
MATERIAL MELTED IN U.S.A.

THANK YOU FOR SELECTING A QUALITY PRODUCT
MANUFACTURED BY THE EMPLOYEES OF CRUCIBLE SPECIALTY METALS

THE ABOVE MATERIAL WAS MANUFACTURED AND TESTED IN ACCORDANCE
WITH ABOVE SPECIFICATIONS AND IS IN CONFORMANCE WITH
SPECIFICATION REQUIREMENTS.
CRUCIBLE MATERIALS CORPORATION
ACTING BY AND THROUGH ITS SPECIALTY METAL

SWORN TO AND SUBSCRIBED BEFORE ME THIS

DAY OF _____, 20

NOTARY PUBLIC

CERTIFIED
BY:

QUALITY ASSURANCE REPRESENTATIVE

DART AEROSPACE LTD		Work Order: 34 de 2
Description: Ø2.250 Support		Part Number: D2891-1
Inspection Dwg: D2891 Rev. A1		Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
Lathe Section									
A	2.274	2.279		2.278	2.277	2.279	2.277		
B	3.702	3.722		3.714	3.714	3.712	3.710		
C	2.564	2.584		2.571	2.573	2.574	2.573		
D	0.718	0.738		0.726	0.727	0.726	0.729		
E	0.090	0.110		0.100	0.100	0.100	0.097		
F	2.464	2.484		2.476	2.477	2.477	2.476		
G	2.029	2.049		2.035	2.033	2.033	2.033		
H	2.964	2.984		2.972	2.972	2.972	2.972		
I	0.913	0.933		0.930	0.930	0.925	0.927		
J	0.022	0.042		0.032	0.032	0.032	0.032		
K	0.090	0.110		0.100	0.098	0.099	0.099		
L									
HAAS Section									
AA	0.188	0.193		.188	.188	.188	.188		
AB	0.240	0.260		.244	.251	.252	.245		
AC	0.115	0.150		.128	.127	.128	.126		
AD	0.040	0.060		.051	.053	.055	.055		
AE	0.010	0.020		.015	.015	.015	.015		
AF	0.240	0.260		.250	.250	.250	.250		
AG	0.290	0.310		.293	.295	.295	.299		
AH	0.115	0.150		.140	.140	.140	.140		
AI	0.454	0.474		.464	.464	.463	.459		
AJ	2.779	2.789		2.783	2.781	2.780	2.782		
AK	0.240	0.260		.250	.250	.250	.250		
AL	1.002	1.042		1.040	1.041	1.037	1.034		
AM	0.053	0.073		.063	.063	.063	.063		
AN	0.257	0.262		.257	.257	.257	.257		
AO	1.663	1.683		1.683	1.683	1.683	1.678		
AP	0.053	0.073		.063	.063	.063	.063		
AQ	0.022	0.042		.032	.032	.032	.032		
AR									
AS									
Accept/Reject									

Measured by: JML	1 of 2
Date: 07/11/01	07/11/18

Audited by: JF
Date: 07/11/22

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	

DART AEROSPACE LTD	Work Order: 74062
Description: Ø2.250 Support	Part Number: D2891-1
Inspection Dwg: D2891 Rev. A1	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions				By	Date
Dim	Min	Max	Go/No Go Gauge	15	16	17	18		
Lathe Section									
A	2.274	2.279		2.277	2.278	2.279	2.278		
B	3.702	3.722		3.708	3.711	3.712	3.712		
C	2.564	2.584		2.572	2.573	2.574	2.574		
D	0.718	0.738		0.730	0.730	0.727	0.727		
E	0.090	0.110		0.097	0.097	0.100	0.100		
F	2.464	2.484		2.476	2.476	2.476	2.476		
G	2.029	2.049		2.034	2.032	2.033	2.032		
H	2.964	2.984		2.972	2.972	2.972	2.972		
I	0.913	0.933		0.930	0.928	0.928	0.927		
J	0.022	0.042		0.032	0.032	0.032	0.032		
K	0.090	0.110		0.099	0.099	0.097	0.099		
L									
HAAS Section									
AA	0.188	0.193		.188	.188	.188	.188		
AB	0.240	0.260		.250	.250	.251	.251		
AC	0.115	0.150		.128	.127	.128	.128		
AD	0.040	0.060		.055	.055	.050	.050		
AE	0.010	0.020		.015	.015	.015	.015		
AF	0.240	0.260		.250	.250	.250	.250		
AG	0.290	0.310		.300	.305	.300	.300		
AH	0.115	0.150		.140	.140	.140	.140		
AI	0.454	0.474		.464	.463	.464	.463		
AJ	2.779	2.789		2.780	2.780	2.781	2.780		
AK	0.240	0.260		.250	.250	.250	.250		
AL	1.002	1.042		1.037	1.033	1.035	1.039		
AM	0.053	0.073		.063	.063	.063	.063		
AN	0.257	0.262		.257	.257	.257	.257		
AO	1.663	1.683		1.683	1.680	1.683	1.680		
AP	0.053	0.073		.063	.063	.063	.063		
AQ	0.022	0.042		.032	.032	.032	.032		
AR									
AS									
Accept/Reject									

Measured by: <i>me</i>
Date: 07/11/11 / 07/11/20

Audited by: J.F.
Date: 07/11/22

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	

DART AEROSPACE LTD		Work Order:	24062
Description: Ø2.250 Support		Part Number:	D2891-1
Inspection: Dwg: D2891 Rev. A1		Page 1 of 1	

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1 9	2 10	3 11	4 12	By	Date
Lathe Section									
A	2.274	2.279		2.278	2.277	2.277	2.277		
B	3.702	3.722		3.712	3.712	3.713	3.712		
C	2.564	2.584		2.574	2.573	2.574	2.574		
D	0.718	0.738		0.727	0.727	0.727	0.726		
E	0.090	0.110		0.100	0.100	0.100	0.098		
F	2.464	2.484		2.476	2.476	2.477	2.476		
G	2.029	2.049		2.033	2.032	2.033	2.030		
H	2.964	2.984		2.972	2.972	2.972	2.972		
I	0.913	0.933		0.930	0.932	0.927	0.930		
J	0.022	0.042		0.032	0.032	0.032	0.032		
K	0.090	0.110		0.099	0.106	0.099	0.099		
L									
HAAS Section									
AA	0.188	0.193		.189	.189	.189	.189		
AB	0.240	0.260		.250	.251	.248	.250		
AC	0.115	0.150		.124	.124	.124	.124		
AD	0.040	0.060		.051	.053	.054	.056		
AE	0.010	0.020		.010	.010	.010	.010		
AF	0.240	0.260		.250	.250	.250	.250		
AG	0.290	0.310		.300	.300	.300	.300		
AH	0.115	0.150		.135	.135	.135	.136		
AI	0.454	0.474		.463	.460	.461	.459		
AJ	2.779	2.789		2.784	2.784	2.784	2.784		
AK	0.240	0.260		.250	.250	.250	.250		
AL	1.002	1.042		1.038	1.037	1.037	1.036		
AM	0.053	0.073		.063	.063	.063	.063		
AN	0.257	0.262		.258	.258	.258	.258		
AO	1.663	1.683		1.675	1.676	1.675	1.676		
AP	0.053	0.073		.063	.063	.063	.063		
AQ	0.022	0.042		.032	.032	.032	.032		
AR									
AS									
Accept/Reject									

Measured by:	OML / J.L.
Date:	07/11/01 / 07/11/21

Audited by:	J.F.
Date:	07/11/22

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	

DART AEROSPACE LTD	Work Order: 34062
Description: Ø2.250 Support	Part Number: D2891-1
Inspection Dwg: D2891 Rev. A1	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	13	14	15	16	By	Date
Lathe Section									
A	2.274	2.279		2.276	2.279	2.278	2.276		
B	3.702	3.722		3.712	3.712	3.714	3.713		
C	2.564	2.584		2.573	2.574	2.573	2.573		
D	0.718	0.738		0.728	0.728	0.728	0.727		
E	0.090	0.110		0.099	0.100	0.100	0.100		
F	2.464	2.484		2.477	2.477	2.477	2.477		
G	2.029	2.049		2.033	2.033	2.033	2.032		
H	2.964	2.984		2.972	2.972	2.972	2.972		
I	0.913	0.933		0.930	0.925	0.927	0.930		
J	0.022	0.042		0.032	0.032	0.032	0.032		
K	0.090	0.110		0.099	0.099	0.099	0.099		
L									
HAAS Section									
AA	0.188	0.193		.189	.189	.189	.189		
AB	0.240	0.260		.250	.252	.250	.250		
AC	0.115	0.150		.125	.125	.125	.124		
AD	0.040	0.060		.054	.055	.054	.056		
AE	0.010	0.020		.010	.010	.010	.010		
AF	0.240	0.260		.250	.250	.250	.250		
AG	0.290	0.310		.300	.300	.300	.300		
AH	0.115	0.150		.136	.136	.136	.136		
AI	0.454	0.474		.461	.464	.464	.463		
AJ	2.779	2.789		2.784	2.784	2.784	2.784		
AK	0.240	0.260		.250	.250	.250	.250		
AL	1.002	1.042		1.036	1.036	1.037	1.036		
AM	0.053	0.073		.063	.063	.063	.063		
AN	0.257	0.262		.258	.258	.258	.258		
AO	1.663	1.683		1.675	1.675	1.675	1.676		
AP	0.053	0.073		.063	.063	.063	.063		
AQ	0.022	0.042		.032	.032	.032	.032		
AR									
AS									
Accept/Reject									

Measured by: <i>ML</i>
Date: 07/11/01 / 07/11/22

Audited by:
Date: J.F. 07/11/22

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	

